

### **Remarks**

The examiner's reconsideration of the application is requested in view of the various amendments above and comments which follow.

Regarding the claim amendments, the following amendments have been made:

- (a) Claim 1; line 7; "an inlet to" inserted before "the chamber to allow said ..." to provide an antecedent for "said inlet" in claim 9;
- (b) Claim 1; penultimate line; "accelerating electrode" changed to "accelerating means";
- (c) Claim 3; first line; "or claim 2" deleted to avoid multiple dependency;
- (d) Claim 4; "in which the accelerating means comprises an electrically conductive member situated on or adjacent to the sensor, and a connector for connecting said member to an accelerating voltage, and" added to provide an antecedent for "said electrically conductive member" in claim 4;
- (e) Claim 5; "Everhard-Thornley" changed to "Everhart-Thornley";
- (f) Claim 6; "conveniently" deleted;
- (g) Claim 9; first line; "any of claims 6 to 8" changed to "claim 6" to avoid multiple dependency;
- (h) Claims 10 and 11; first line; "any of the preceding claims" changed to "claim 1" to avoid multiple dependency;
- (i) Claim 11; "may to advantage include" changed to "includes";

- (j) Claim 13; “in which the apparatus further includes an electrically conductive cage mounted in front of, but electrically isolated from, the barrier means, the cage being connectable to an accelerating voltage for drawing particles towards the barrier means, the cage being so constructed as to allow the passage of particles therethrough, and” added to provide an antecedent for “the cage” in claim 13;
- (k) Claim 15; last line; “any of claims 1 to 14” changed to “claim 1” to avoid multiple dependency;
- (l) Claim 16; the underlined clause added to properly identify structure;
- (m) method claims 17 to 19 added.

Amendments (a) and (j) address the examiner’s rejections under 35 U.S.C. §122 for the lack of antecedent basis for “said inlet” in claim 9 and “the cage” in claim 13.

The examiner, in numbered section 1 on page 2 of the office action, has rejected independent claim 1, and several of the dependent claims, as being anticipated by Coates U.S. Patent Number 4,596,929. The remaining claims have been rejected by the examiner on the basis of obviousness, again with Coates being the primary reference. Reconsideration is requested.

The examiner has asserted that the grid 42 shown in Figure 3 of Coates *et al.* is an electrically conductive barrier means sealing a chamber to allow a partial vacuum to be maintained. This is incorrect, which has led to incorrect conclusions.

The grid 42 shown in Figure 3 of Coates *et al.* does not perform any function that allows a partial vacuum to be maintained in the chamber 47 shown in Figure 3 of Coates *et al.*

Turning to Figure 1 of Coates *et al.*, it can be seen that the components shown in Figure 3 are all accommodated in a lower vacuum specimen chamber 26. The pressure inside the chamber 47 is the same as that inside the lower vacuum specimen chamber 26 and this would be the case whether or not the grid 42 were present.

The apparatus of claim 1 of the present application, on the other hand, is for use in an **environmental** scanning electron microscope (ESEM), in which the specimen chamber is maintained at a much higher pressure than the lower vacuum specimen chamber of the SEM disclosed by Coates *et al.* If the chamber of the apparatus of claim 1 were maintained at this much higher pressure, catastrophic arcing would occur between the detector (which is at 10kV) and the barrier means (which is at 1kV at most).

Moreover, it is clear that the detector disclosed by Coates *et al.* is completely different from that of claim 1 of this application because Figure 1 of this application shows a first outlet 15 from the specimen chamber 10, and a second outlet (identified by reference numeral 28 in Figure 2) from the chamber containing the detector. Coates *et al.* do not show an outlet from the chamber 47 of Figure 3 because it would be unnecessary; the specimen chamber 26 of Coates *et al.* is pumped to a low vacuum. Since the grid 42 performs no sealing function, no outlet from the chamber is necessary because it is pumped to a low vacuum through the same outlet as the specimen chamber 26.

It is therefore submitted that claim 1 is allowable, as are claims 2 to 16 by virtue of their dependency from claim 1.

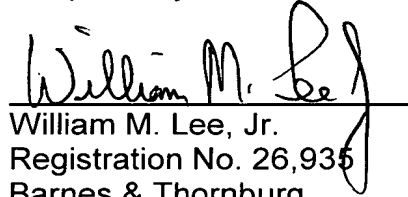
New independent claim 17 is directed to a method of detecting charged particles and corresponds to claim 1. It is believed that claim 17 and its dependent claims 18 and 19 are allowable for the same reasons as claims 1 to 16.

In view of the foregoing, it is submitted that this application is now in condition for allowance, and the examiner's further and favorable reconsideration in that regard is

urged. Also, since this response is being submitted during the fifth month following the examiner's office action, an appropriate petition for extension of time to January 20, 2004 is submitted herewith.

January 13, 2004

Respectfully submitted,

A handwritten signature in black ink, reading "William M. Lee, Jr.", is written over a horizontal line. The signature is stylized with a large, looped "L" and "J".

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